Active lifestyles: students' sport habits in the inner North of Portugal

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1. Introduction

Physical activity is widely recognised as an important behavioural characteristic for health promotion and disease prevention (Bouchard & Shephard, [1]). However, a large portion of the population is not active enough to obtain these health benefits (Dishman, [2]). In the contemporary society there are many requests for sedentary practices and simultaneously for the consumption of highly energetic food. Concurrently, the necessity for physical practice of great demand, not only in intensity but also in duration, is more and more reduced (Mendes, [3]). These facts, joined with others, lead the society to confront themselves with more and more serious problems of civilizational diseases (obesity, among others). And if the problem used to be centred on adults, since a while back the incidence in children has grown substantially. Recently, more attention has been paid to socio-cultural and physical environmental influences on healthy behaviours. New approaches for promoting physical activity consider the need of supportive environments for individual changes to occur. These models, called Ecological Models, reflect the evidence that the most effective interventions occur on multiple levels. Simmons-Morton and colleagues [5] proposed a model with three levels (individual, organisational, and governmental) in four settings (schools, worksites, health care institutions, and communities), which should be considered in future interventions to promote physical activity. In this social-ecological approach (Sallis, Grossman, Pinski, Paterson & Nader, [4]), major variables to be considered in physical activity promotion are: (a) Individual perceptions: outcomes, barriers, behavioural control (self-efficacy); (b) Social influences and social support; and (c) Physical environment and policy.

The objective of this paper is to study some social and environmental variables (type of residential environment (urban or rural), gender, scholastic year, level of repeating and socio-economic level) that influence physical activity adoption and/or

maintenance for basic and college students (i.e., members of the population ranging from, roughly, 10 to 18 years of age), based upon recent behavioural research literature which contains various theoretical explanations for these behaviours.

2. Material e methods

2.1 Subjects

The study was centred on 201 subjects from the Northern Interior of Portugal and they presented the following characteristics:

Table 1. Summarised characterisation of the sample (frequency and percentage of the subjects in the different levels of the independent variables).

	Level	Freq.	%
Scholastic Year	5	45	22,4
	6	30	14,9
	7	25	12,4
	8	20	10,0
	9	20	10,0
	10	15	7,5
	11	23	11,4
	12	23	11,4
Gender	Masc.	111	55,3
	Fem.	90	44,7
Repetition	Yes	25	12,4
	No	176	87,6
Sports Practice	Yes	88	43,8
	No	113	56,2
Place of Residence	< 1000 habitants	48	55
	>1000 habitants	40	45
Subsidised	Yes	72	36,2
	No	127	63,8

2.2. Variables

2.2.1 Independents

- Scholastic Year: from the 5th to the 12th grade.
- Scholarly Cycle: Junior, Senior and Secondary Schools.
- Gender: Masculine and Feminine
- Repetition: Yes and No.

- Subsidised: – Yes and No.
- Environment – Urban / Rural: ≤1000 habitants; > 1000 habitants.

2.2.2 Dependent

- Habits of sports practice: evaluated with the use of 2 indicators: number of sessions per week and the average duration of each session.

2.3 Instrument

The instrument was a questionnaire where we characterise the respondent according to variables of socio-demographic variables. We follow that with questions referring to the duration and frequency of the weekly sport and physical activity practice.

3. Result analysis and discussion

3.1 Scholastic year

The results indicate that of the 201 students from the sample, only 89 (44,2%) state that they practice physical activity, some in the federated context. On average, those that declare to practice a physical activity do it between 2±1,41 and 3,5±2,07, weekly, and belong to the 8th and 9th grade, respectively.

We noticed an increase in weekly frequency between the 5th and 9th grade, with exception to the 8th grade, which registered an appreciated regression. Furthermore, we can declare that it is between the 7th and 9th grade that the practice registers a higher frequency. The start of Secondary School determines a strong decrease in the practice of physical activity (almost a session per week) and more serious still, it tends to stay with constant values through out the scholarly cycle.

The ratio between participant and non-participant in the interior of each scholarly year shows that only in the 7th, 10th and 11th grades are the values superior to 1, in other words, there are more participants. It also permits us to observe that it is in the 9th grade (higher weekly frequency) that the ratio is more unfavourable to the participants. On the contrary, it is in the Secondary School that the number of participants/ non-participants is more favourable to the first, in other words, there are more concerns with the aspects in physical and psychological well-being and, most probably with the aesthetics nature. Furthermore only the 12th grade shows lower values and if we take into consideration the year and the consequences that it brings, we can consider it as a good result.

We can also regard that the ratio between participant and non-participant presents a decreasing tendency as it progresses in the scholastic year, in each scholarly cycle.

With regard to the average time of the physical activity, the values oscillate between 68±41,31 and 96,92±40,90 minutes in the 12th and 6th grade. We observed a decreasing tendency in the average time as we progressed from the 6th to the 12th grade, with a sole inflexion in the 11th grade. It seems that the scholarly demands tend to grow and the decrease in available time is felt in the sportive practice.

In spite of these differences and tendencies, Anova reveals to us that the sportive practice evaluated by the frequency and average duration, are statistically equal

These results seem to prove that the sportive practice among the student population of the Junior, Senior and Secondary Schools is marked by a "cultural melting-pot" that tends to make them homogeneous, even if particular and contextual circumstances (closeness of exams, etc.) might condition the practices in a non-decisive form. (Function of the father and mother's qualification related to the general and particular cultural melting-pot).

Taking into consideration the product result (Freq*Average session duration), we applied the Anova and verified that there are no significant differences between the different scholastic years $F(7,80)=.939$, $p>.05$.

The analysis related to the scholarly cycle, as shown in table 2, indicate that the number of sessions oscillate between 2,65±1,35 and 3,08±1,64 in the Junior and Senior Schools, respectively. Furthermore, the extreme cycles are practically identical and even the results of the Secondary School are not sufficiently different for the Anova to reveal itself as statistically significant ($F(2,86)=.89$, $p>.05$). In relation to the average duration of the sessions, we registered a decreasing tendency as we progress in the scholarly cycle, between 84,17±34,59 and 80,16±38,78. However, the duration does not reveal itself as statistically significant ($F(2,85)=.089$, $p>.05$).

We also verified, quite surprisingly, that the number of participants tends to increase concomitantly with the scholarly cycle. In other words, it seems indispensable to promote the sportive activity in the lower age groups. We are not referring to students with reduced sportive practice; we are referring to those with no sportive practice at all, outside the School, being that the first 2 studied cycles have a ratio of 1/3.

3.2. Gender, place of residence, repetition and socio-economic level

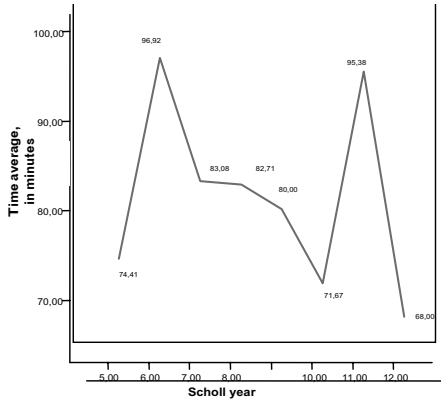
The masculine gender presents higher levels of declared practice than the feminine gender, not only in terms of sessions per week (3,13±1,5 Vs 2,09±,641, respectively), but also in terms of the average duration in each session (90,16±39,5 Vs 68,13±27,17). The product result of the average values of these 2 indicators, results in a sportive practice time for the boys that is double that of the girls.

To this supremacy situation we add the fact that the number of participants among boys is superior to that of the non-participants, whereas among the girls this ratio decreases to 0,55.

Table 2. Comparison, using Anova, of the frequency and average session duration in the sportive practice in relation to the scholastic year and scholarly cycle.

				N	No practice	N/N practi-ce	Mean	SD	SS	df	MS	F	p
Habits of Sportive Practice Outside of School	Scholastic Year	Sessions per week	5	18	27	,67	2,50	1,42	15,40	7	2,20	1,20	,31
			6	13	17	,76	2,85	1,28					
			7	13	12	1,08	3,46	1,39					
			8	7	13	,54	2,00	1,41	148,1	81	1,82		
			9	6	14	,43	3,50	2,07					
			10	9	6	1,50	2,67	1,22					
			11	13	11	1,18	2,62	1,12	163,50	88			
			12	10	13	,77	2,70	1,05					
		Minutes per sessions	5	17			74,41	26,09	9164,61	7	1309,2	,95	,47
			6	13			96,92	40,90					
			7	13			83,08	30,38					
			8	7			82,71	62,30	109820,46	80	1372,75		
			9	6			80,00	24,49					
			10	9			71,67	31,62					
			11	13			95,38	38,86	118985,08	87			
			12	10			68,00	41,31					
	Scholarly Cycle	Session NR	2º	31	44	,70	2,65	1,355	3,344	2	1,67	,898	,411
			3º	26	39	,67	3,08	1,647	160,162	86	1,86		
			Sec.	32	30	1,07	2,66	1,096	163,506	88			
		minutes	2º	30			84,17	34,593	249,57	2	124,78	,089	,915
			3º	26			82,27	38,682	118735,50	85	1396,8		
			Sec.	32			80,16	38,782	118985,08	87			

Table 3. Graphic Representation of the average values of weekly frequency and session duration in the sportive practice in relation to the scholastic year.



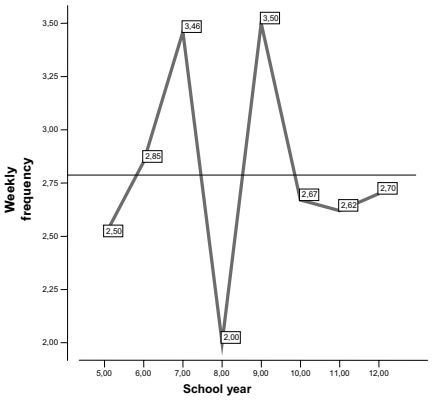


Table 4. Comparison, by the t-test, of the frequency and average duration of sessions in the sportive practice in relation to the gender, place of residence, repetition and socio-economic level.

			N	N practice	N/N practice	Mean	Sd	t	df	p
Gender	Sessions per week	Masculine	57	55	1,04	3,16	1,50	3,79	87	,000
		Feminine	32	58	.55	2,09	,641			
	Minutes per session	Masculine	56	55		90,16	39,59	2,79	86	,006
		Feminine	32	58		68,13	27,17			
Place of Residence	Sessions per week	<1000 habit	49	58	.84	2,78	1,46	,00	87	,999
		≥1000 habit	40	54	.74	2,78	1,25			
	Minutes per session	<1000 habit	49	58		86,92	43,24	1,36	86	,176
		≥1000 habit	39	54		76,15	26,52			
Repetition	Sessions per week	Yes	13	12	1,08	3,08	1,60	,862	87	,391
		No	76	101	.74	2,72	1,32			
	Minutes per session	Yes	13			74,62	34,78	-,794	86	,430
		No	75			83,45	37,41			
Subsidised	Sessions per week	Yes	28	45	.62	2,96	1,66	,842	86	,402
		No	60	67	.90	2,70	1,21			
	Minutes per session	Yes	28			85,18	38,52	,478	85	,634
		No	59			81,08	36,69			

It seems almost inevitable that the boys present highly significant differences in relation to the girls, in both indicators.

These results indicate in an unmistakable way the melting pot we mentioned in the lines above, and which finds its foundations in a notion of society that we thought to be in extinction.

When referring to the place of residence, we register equality in the average of weekly sessions in the sportive practice, which reflects in a practice spaced out by a day of rest between each session. We can also observe that students who live in towns with fewer inhabitants present a lower duration average than those that live in smaller towns. However, in neither comparison do we verify significant differences between groups, as we conclude from the t-test. Concomitantly the students from the smaller towns are the ones that proportionately present a higher number of participants (.84 Vs .74).

The smaller towns are more stimulated to the sportive practice as a form of occupying their free time, probably because the cultural property that they have available is in minor number and with lower frequency.

When referring to the repetition, the results indicate that the group of repeaters present higher average values for the weekly sessions and a lower duration per session, even though in both cases the differences do not present statistical expressions. The more expressive difference between the 2 groups is situated in the ratios between participant and non-participant, with a clear advantage to the repeaters. While among these the N of participant and non-participant is identical, in those the ratio decreases to 3 in every 4.

In relation to the influence of the NSE over the sportive practice, we notice that the subsidised students present a slight advantage, not only in the average weekly sessions, but also in the average duration in sessions, although statistically the groups are identical. Even though in both groups the number of participants is lower than the number of non-participants, a larger distinction between the 2 socio-economic levels is found in the participant/non-participant ratio, with advantage to the subsidised students.

4. Conclusions

The results of this study permit us to conclude that only 44,2% (89) of the students declare to practice physical activity, oscillating, on average, between 2±1,41 and 3,5±2,07 weekly sessions.

We noticed an increase in the weekly frequency between the 5th and 9th grades, with exception to the 8th grade, which registers an appreciated regression. The start of the Secondary School determines a strong decrease in the physical activity practice (almost one session per week) and it tends to maintain constant values during the whole scholarly cycle.

The ratio between participant/non-participant in each scholastic year demonstrates that only in the 7th, 10th and 11th grades is the value superior to 1, in other words, there are more participants. It is in the 9th grade that the ratio is more unfavourable to the participants.

Nevertheless, the sportive practice evaluated from the average frequency and duration is statistically equal.

In relation to the gender, the masculine presents higher levels of practice than the feminine, not only in sessions per week (3,13±1,5 Vs 2,09±,641, respectively) but also in average duration per session (90,16±39,5 Vs 68,13±27,17). The product result of the average values in these 2 indicators results in a sportive practice time for the

boys that is double that of the girls, being statistically significant. In addition, among the boys, the number of participants is superior to the non-participants, whereas among the girls this ratio lowers 0,55.

The place of residence registers equality in the average weekly sessions in the sportive practice (@3). The students from the more populous towns present a lower average duration, comparatively with their colleagues integrated in the smaller towns. However, in both comparisons we did not verify significant differences between groups. Concomitantly the students from the smaller towns present a proportionally higher number of participants (.84 Vs .74).

The repeating students sustain that, on average, they practice physical activity more frequently (3,08 Vs 2,72 weekly sessions), though with a lower duration (74,6 Vs 83,4 minutes). Nevertheless, statistically, the groups are the same. When referring to the participant/non-participant ratio, the repeating students present much better results (1:1) comparatively to the non-repeating ones (3:4).

The subsidised students comparatively to their non-subsidised colleagues, present better average results, not only in terms of weekly sessions (2,96 Vs 2,70), but also in terms of duration (85,1 Vs 81 minutes), even if we did not verify significant differences between the 2 groups.

When referring to the participant/non-participant ratio, the group of non-subsidised students presents much better results, which reflect a 9:10 ratio, while between the subsidised students the ratio is 6:10.

We recommend that teachers should assist students, parents and administrators in identifying and overcoming barriers to physical activity, which includes providing students with multiple opportunities for a wide-variety of physical activity within and outside physical education classes and planning policies to fight against socio-demographic variables that affect lifestyle quality.

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